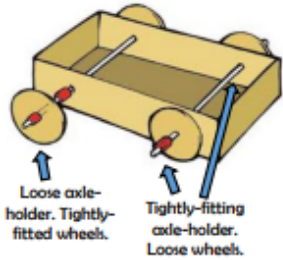


Types of Mechanisms:

Wheels and Axles



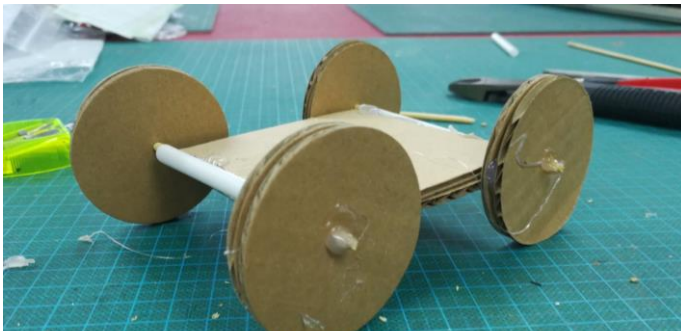
**Free Axles - Fixed Wheels**

-The axles move with the wheels. Loose-fitting axle-holder, tightly fixed wheels.

**Fixed Axles - Free Wheels**

-The axles will remain fixed to the chassis. The wheels move alone. Tight-fitting axle-holder, loose-fitting wheels.

Chassis



**Vocab:**

Mechanism: A device used to create movement in a product.

Wheel: Circular objects that roll on the ground, helping vehicles and other objects to move easily.

Axle: Rods that help the wheels to rotate.




Fixed: Fastened securely in position.

Chassis: The strong frame or base on which the vehicle is built.

Key Skills and Knowledge:

- Mechanism create movement, so you need to decide where you want the movement to happen by using what happens in the story
- All things are designed with specific purpose and audience.
- Axles and wheels need to fit perfectly together to make sure they can remain strong, but also move easily.
- Designs and prototypes need to be evaluated and adapted based on need.
- The chassis needs to be strong enough to hold up the rest of the vehicle. Appropriate material and structure used is vital.



Example Mechanisms		
	Ferris Wheel	-A <u>Ferris Wheel</u> is one example of a wheel and axle mechanism in action. Normally, Ferris Wheels are <u>fixed to the axle</u> . Force is applied to the axle which makes it spin. This makes the giant wheel spin too!
	Roller Skates	- <u>Roller skates</u> are another example of wheel and axle mechanisms. Obviously, there are four wheels here instead of one, and the wheels are much smaller. Often, the <u>wheels rotate free from the axle</u> , but sometimes they are fixed.
	Toy Car	<u>Toy cars</u> (and real cars) use wheel and axle mechanisms to move. On toy cars, the <u>wheel is normally fixed to the axle</u> , meaning both the wheel and axle spin. This makes it really important that there is not too much friction on the axle, or the wheel will not move!

Mentionable Mechanisms and People:

Evidence suggests the wheel and axles has been around since 5000 BC and was possibly first used as a potter's wheel. About 100 years later, wheel wagons were being used.

The earliest wheels were made out of wood!

Now you can see wheels and axles all around you as a pizza cutter, windmill and drills!

